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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/870,902	05/31/2001	Jonathan Robert Lamb		7755

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EXAMINER

EWOLDT, GERALD R

ART UNIT PAPER NUMBER

1644

DATE MAILED: 10/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/870,902

Applicant(s)

LAMB ET AL.

Examiner

G. R. Ewoldt, Ph.D.

Art Unit

1644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2,4-13,17,19,20,25,27,30 and 32 is/are pending in the application.
- 4a) Of the above claim(s) 10-13,17,30 and 32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2,4-9,19,20,25 and 27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

1. Applicant's election with traverse of Group I in the paper filed 07/07/04 is acknowledged. Applicant's election with traverse of the species: (A) the immunosuppressive cytokine IL-10 and, (B) the Notch ligand Delta, are acknowledged.

Applicant argues that a search of the claims of Groups I and II could be made without serious burden as said searches would be co-extensive. Applicant also argues that the restriction would result in inefficiencies and unnecessary expenditures.

These arguments are not found persuasive for the following reasons. While the searches of the inventions of Groups I and II may overlap, they are not coextensive. Whereas one reference might teach the method employing a tolerogenic APC to produce a tolerogenic lymphocyte, said reference would not necessarily teach a method employing a tolerogenic lymphocyte to produce another tolerogenic lymphocyte. Accordingly the searches are not coextensive. A showing of noncoextensive searches has been accepted by the Office as a showing a serious search burden on the Examiner. Regarding inefficiencies and unnecessary expenditures, said considerations are not a basis for the rejoinder of patentably distinct inventions.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 10-13, 17, 30, and 32 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to non-elected inventions.

Claims 2, 4-9, 19, 20, 25, and 27 read on the elected invention and are being acted upon.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 2, 4-9, and 20, are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention, specifically, in Claim 2, the phrase "upgrading expression of Notch or Notch ligand" is vague and

indefinite as it is undefined. It is unclear how "upgrading" differs from the normally used term "upregulating".

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 5-7 and 25 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention.

Under *Vas-Cath, Inc. v. Mahurkar*, 19 USPQ2d 1111, 1117 (Fed. Cir. 1991), to satisfy the written description requirement, an applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention, and that the invention, in that context, is whatever is now claimed.

There is insufficient written description to show that Applicant was in possession of "polypeptides or fragments thereof" or "Noggin, Chordin, Follistatin, Xnr3, FGF and derivatives, fragments, variants and homologues thereof", capable of "upgrading" or upregulating the expression of Notch or a Notch ligand.

The specification discloses just two compositions capable of upregulating Notch or a Notch ligand, i.e., IL-10 and LPS. It is unlikely that the inflammatory composition LPS would prove valuable in a method of inducing immunosuppression/tolerance. Thus, IL-10 is the only composition used in the method of the instant claims demonstrated to be functional. The claims however, encompass the use of an essentially unlimited genus of derivatives, fragments, variants, and homologues, none of which are disclosed. Further, the definition provided for the terms (page 6) make clear that any substitutions, variations, modifications, replacements, deletions or additions are encompassed. Given the disclosure of just a single functional species, and the unlimited number of compositions encompassed for use in the method of claims, one of skill in the art would conclude that the specification fails to disclose a

representative number of species to describe the claimed genus.
See *Eli Lilly*, 119 F.3d 1559, 43 USPQ2d 1398.

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 2, 4-9, 19, 25, and 27 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Steinbrink et al. (1997).

Steinbrink et al. teaches a method for producing a tolerogenic regulatory lymphocyte comprising incubating a dendritic cell (DC) with the immunosuppressive cytokine IL-10 and antigen (HA) and contacting said DC with a lymphocyte to produce a tolerogenic regulatory lymphocyte (see Materials and Methods and Figure 7). Note that the claims also recite incubating the DC with a composition capable of "upgrading" the expression of Notch or the Notch ligand Delta (the elected species) however, this "upgrading" is inherent to the method of the reference. The specification, in effect, merely further characterizes the mechanism by which a known method produces a tolerogenic regulatory lymphocyte.

The reference clearly anticipates the claimed invention.

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Steinbrink et al. (1997) in view of Scholz et al. (1998).

Steinbrink et al. has been discussed above.

The reference teaching differs from the claimed invention only in that it does not teach the myelin basic protein (MBP) antigen.

Scholz et al. teaches that MBP is an important autoantigen in multiple sclerosis (MS) (see particularly page 1532, column 2). The reference further teaches that activated MBP-specific CD4 T cells play a role in the pathogenesis of MS (see particularly page 1538, column 2).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention to perform a method for producing a regulatory tolerogenic lymphocyte comprising incubating a DC with the immunosuppressive cytokine IL-10 and antigen and contacting said DC with a lymphocyte to produce a tolerogenic regulatory lymphocyte, as taught by Steinbrink et al., employing MBP as the antigen. One of ordinary skill in the art at the time the invention was made would have been motivated to employ MBP as the antigen given the teachings of Scholz et al. that MBP is an important autoantigen in MS and that activated MBP-specific CD4 T cells play a role in the pathogenesis of MS. Thus, a tolerogenic lymphocyte capable of regulating autoreactive MBP-specific CD4 T cells would comprise a valuable tool for the study and possible treatment of MS.

11. No claim is allowed.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Gerald Ewoldt whose telephone number is (571) 272-0843. The examiner can normally be reached Monday through Thursday from 7:30 am to 5:30 pm. A message may be left on the examiner's voice mail service. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Chan can be reached on (571) 272-0841.

Please Note: Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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9/30/04

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